WHAT IS CLAIMED IS:

1. A system for creating a contiguous digital image of a portion of a microscope sample, comprising:

a motorized stage configured to support a microscope sample and move the microscope sample at a substantially constant velocity;

an illumination system configured to illuminate a portion of the microscope sample;

an objective lens positioned for viewing the illuminated portion of the microscope sample;

a line scan camera optically coupled with the objective lens, the line scan camera configured to create a digital image strip of a portion of the microscope sample, the digital image strip captured while the microscope sample is moving at substantially constant velocity;

an image composer configured to align adjacent digital image strips into a contiguous digital image of a portion of the microscope sample; and

a data storage area configured to store the contiguous digital image.

2. The system of claim 1, further comprising:

a focus map having a plurality of focus points on the microscope sample; and

a focusing system configured to focus the line scan camera during creation of each digital image strip in accordance with the focus map;

3. The system of claim 1, wherein the motorized stage further comprises:

a first motor configured to move the microscope sample in a first direction in the sample plane; and

a second motor configured to move the microscope sample in a second direction in the sample plane, wherein the second direction is orthogonal to the first direction.

4. The system of claim 3, wherein the first motor is a servo motor.

5. The system of claim 1, wherein the illuminated portion of the microscope sample comprises a linear field of view.

6. The system of claim 5, wherein the illumination system is optimized to uniformly illuminate the linear field of view.

7. The system of claim 1, wherein the focus map is non-planar.

8. The system of claim 1, wherein the line scan camera is configured to capture red, green and blue color signals through discrete linear array sensors, wherein each linear array sensor is configured to capture 8 bits of data.

9. The system of claim 1, wherein the focusing system comprises a piezo positioner that is communicatively coupled to a piezo controller.

10. The system of claim 9, wherein the piezo controller and the piezo positioner are configured to adjust the focus of the line scan camera at least 10 times per second.

11. The system of claim 1, wherein the contiguous digital image is a diffraction-limited contiguous digital image.

12. A method for creating a contiguous digital image of a portion of a microscope sample, comprising:

moving a microscope sample at substantially constant velocity relative to a line scan camera having a linear field of view, wherein a first strip of the microscope sample is exposed to the field of view of the line scan camera during said motion;

illuminating a portion of the first strip while the microscope sample is in motion;

scanning the illuminated portion of the first strip with the line scan camera while the sample is in motion;

storing a digital image of the first strip;

moving the microscope sample at substantially constant velocity relative to the line scan camera, wherein a substantially unscanned second strip of the microscope sample is exposed to the field of view of the line scan camera during said motion;

illuminating a portion of the second strip while the microscope sample is in motion;

scanning the illuminated portion of the second strip with the line scan camera while the sample is in motion;

storing a digital image of the second strip; and

composing the digital image of the first strip and the digital image of the second strip into a contiguous digital image.

13. The method of claim 12, further comprising:

focusing a line scan camera on a plurality of focus points within a microscope sample;

creating a focus map comprising the plurality of focus points;

adjusting the focus of the line scan camera during scanning of the first strip in accordance with the focus map; and

adjusting the focus of the line scan camera during scanning of the second strip in accordance with the focus map.

14. The method of claim 13, wherein the focus map is non-planar.

15. The method of claim 13, wherein each adjusting step is carried out by a piezo positioner communicatively coupled with a piezo controller.

16. The method of claim 12, wherein each moving step is carried out by a servo motor.

17. The method of claim 12, wherein the digital image of the first strip has a first length and a first width and the digital image of the second strip has a second length and a second width, and wherein the first length and the second length are not equal.

18. The method of claim 17, wherein the first width and the second width are equal.

19. The method of claim 17, wherein the first width and the second width are not equal.

20. The method of claim 12, wherein the first strip comprises a first perimeter edge of the sample and an opposing perimeter edge of the sample, wherein the first edge and the opposing edge are separated by at least 2 micrometers.

21. The method of claim 12, wherein the second strip comprises a first perimeter edge of the sample and an opposing perimeter edge of the sample, wherein the first edge and the opposing edge are separated by at least 2 micrometers.

22. The method of claim 12, wherein the microscope sample is moved in a first direction to scan the first strip and the microscope sample is moved in a second direction to scan the second strip.

23. The method of claim 22, wherein the first direction and second direction are opposite directions.